

COLORADO REFINING COMPANY

A SUBSIDIARY OF TOTAL PETROLEUM, INC.

5800 BRIGHTON BOULEVARD
COMMERCE CITY, COLORADO 80022

TELEPHONE 303 295-4500

Certified Mail
Return Receipt Requested
Z 558 499 871

January 16, 2001

Jane Nakad
U.S. EPA Region VIII
999 18th Street, Suite 300
Denver, CO 80202-2466

RE: Request for Information on NRC Report #: 539092

Dear Ms. Nakad:

This letter is in response to the request for information, pursuant to section 308 of the Clean Water Act, regarding NRC Report #:539092. The enclosed packet of information provides answers to the questionnaire received by Colorado Refining Company from your office.

If you have any question regarding the information provided, please call me at 303-227-2414.

Sincerely,



Mark Suyama
Environmental Engineer

Enclosure

RECEIVED

JAN 22 2001

1. Describe the facility or vehicle (i.e. pipeline, tank, well and/or tank battery, truck, boat, etc.) from which the oil, pollutant, or contaminant was released, discharged or spilled.

Refinery stormwater/wastewater collection system's lower oil/water separator

2. Please provide the name and street address of the current owner(s) of the facility or vehicle described above, including Dun & Bradstreet number. Also, provide names and current addresses or parent corporation (if any) and all owners of the business for the last two years.

Colorado Refining Company
5800 Brighton Blvd.
Commerce City, Colorado 80022
Dun & Bradstreet No: 03-753-9129

Parent Company: Ultramar Diamond Shamrock Corporation
6000 N. Loop 1604 W
San Antonio, TX 78249-1112

3. Please provide a description of all types of business or activities conducted in or around the facility or vehicle.

Petroleum refinery

4. State what type of business unit (i.e., corporation, partnership, LLC, etc.) owns and/or operates the facility or vehicle. In what state was the business unit incorporated or organized. If a corporation, please provide the name and address of all parties listed with the state in which the business unit was organized.

Colorado Refining Company, a Colorado corporation

Registered Agent for Service: The Corporation Company
1675 Broadway, Suite 1200
Denver, Colorado 80202

5. Please provide the name and address of the operator of the facility or vehicle described above, if different from the name and address of the owner at the time of the incident. Describe the relationship between the owner and operator (i.e. employee, subcontractor, lessee, etc.).

Colorado Refining Company is the owner and operator of the facility.

6. State the time and date of the releases(s) and how this was determined.

The release occurred the morning of 8/18/00. An inspection of the lower oil/water separator at 3:00 AM was conducted during a walk through of the wastewater treatment system by the pumper on shift. At that time there were no indications of overflow. At 6:40 AM oily water was

discovered in the wastewater treatment effluent canal. CRC estimates that the release was less than 1 hour. This estimation is based on the time it would take the oily water discharge to travel the length of the storm water migration and the minimal traces of oil seen around CRC's discharge point at 6:40 AM when the incident was discovered.

A. When was the incident discovered (time and date)?

6:40 am on 8/18/00

B. By whom and how was the incident discovered?

Operations discovered the incident while monitoring the area during the stormwater event.

C. State how many days the release continued.

Less than one day. At 6:45 am, the discharge flow from the WWTS was stopped and the stormwater pond was blocked in. Bales of straw were immediately placed around the discharge location heading into Sand Creek.

D. State the weather conditions, including temperature, precipitation, cloud cover, etc.

The weather leading up to and during the incident were extreme. The average temperature for the day was 75.9 F with a high of 98 F and low of 54 F. The total rainfall at the refinery was 2.9 inches in a little over an hour. The sky was overcast changing to scattered by midday. The heavy precipitation in a short period of time was the primary reason the lower oil water separator was overwhelmed and resulted in an overflow of oily water. In addition to the stormwater onsite, a significant amount of stormwater flowed onto CRC property via a low point along the railroad right of way on the east side of the facility. This large addition of stormwater flow added to the onsite flow overwhelmed the lower oilwater separator.

7. State the type of all substances released, including the chemical name, formula, and specific gravity. If the material discharged was a mixture, please give the percentages of substances in the mixture or solution. Please send copies of the material Safety Data Sheets if available.

Slop Oil consists of a mixture of oil that is accumulated in the wastewater treatment system and sent to storage for reprocessing in the facility. The oily water that overflowed from the lower oil/water separator was a mixture of this material with water. In fact, due to the large volume of stormwater the overflowing material was composed primarily of stormwater runoff. Due to the variability of slop oil CRC does not keep a MSDS for this material. CRC does sample and analyze slop oil as part of its benzene tabulation compliance program. See attachment #1.

- A. Please indicate if any of the referenced substances are specifically listed or designated as hazardous substances in the Comprehensive Environmental Response, Compensation, and Liability Act, 42 U.S.C. 9601, section 101(14) (Yes or No). List those substances.

Benzene, Toluene, Ethylbenzene, Xylene, and Cyclohexane

8. State the quantity of each substance that was released from the facility and how the quantity released was determined.

It has been estimated that approximately 464 gallons of oil was released during the incident. It is also estimated that no more than 1 gallon of oil reached the Sand Creek based on visual observation of the canal, the creek, and the surrounding areas. The remaining 463 gallons were recovered from pooled stormwater or disposed in removed soils along the migration path. Attachment #2 details how the quantity released was determined. It was estimated that the entire volume of oil calculated in the separator was released over 60 minutes. This assumption gives the maximum amount of oil that could have been released. Prior to and during the release, the separator's oil skimmer pump was running. At 3AM the pumper on shift turned the skimmer pump on and left it running until after 6:40AM, when the release was discovered. The lower oil/water separator oil skimming system is a floating system that rises and falls with the level of the oil. During the release, the pump continued to pump oil off the surface of the separator until the level of the separator was back to normal depth. This volume of oil that was removed before and during the incident has been accounted for and subtracted from the total volume of oil that the separator held.

Vacuum trucks and trailers were utilized to remove the oil that was standing on top of the pooled stormwater. Following this stage of the clean up effort a backhoe and shovels were utilized to remove any contaminated soil along the path of stormwater migration. See attachment #2 for calculations and attachment #3 for soil analysis.

- A. State the total capacity of the vehicle or tank from which the substance was released.

Lower oil/water separator water bay = 16,000 gallons

- B. If the release was from a pipeline also indicate the size and daily throughput of that pipeline.

N/A

9. Were samples of the substance(s) collected and analyzed? If so, please include copies of the analyses. Include the locations from which the samples were collected, the time the samples were collected, the individual collecting the samples, and the name of the laboratory which conducted the analyses.

Samples of the material that was released were not taken the day of the event. But, CRC does have historical analysis of this material. Slop oil, the material released from the lower oil/water separator, is periodically sampled each year as part of CRC's benzene TAB compliance program. Samples of the contaminated soil that was remediated were taken following the clean-up efforts. The location of the remediation was along the stormwater path of migration and north of the refinery's discharge pipe along the discharge canal. The refinery's Environmental Engineer, Mark Suyama, collected the samples and sent them to Pace Laboratory for analysis. See attachment #3.

10. Give the location of the release, including the street address, city, or township, range, quarter sections and fractions; latitude and longitude, if known; county and state.

5800 Brighton Boulevard, Commerce City, Adams County, CO. Latitude 39 degrees, 45 minutes, 12 seconds. Longitude 104 degrees, 56 minutes, 30 seconds.

A. Was the release on Indian Lands (Yes or No)? This includes not only reservations, but any type of Indian Lands. If so, state which ones?

No

11. Describe the pathway(s) of migration of the discharge from the specific source within the facility or vessel. Include diagrams and topographic or other maps.

The source of the spill was at the lower oil water separator. The heavy rainfall resulting in large volumes of onsite and offsite stormwater runoff overwhelmed the water pumps on the oil separation side. Although the pumps were running the level within the separator increased and eventually overflowed. The overflowed material mixed with stormwater runoff and migrated towards Sand Creek. The flow of discharge was north along the east side of the railroad ditch that runs along the west side of the refinery property. See attachment #4.

12. Did the material reach or threaten any waterway (i.e. river, creek, intermittent stream, ditch, pond, lake, gully, mudflat, etc.), including any wetlands, marshes or sewers? (Yes or No).

Yes, Sand Creek.

A. If yes, describe the waterway reached or threatened, include its width and depth, the flow direction, the condition at time of discharge (i.e. low, flooded, quiet, turbulent, etc.) and its use (i.e. agriculture, ranching, recreation, commerce, etc.).

The waterway reached was Sand Creek. Sand Creek is designated recreational. At the point of discharge the width is approximately 70 feet with the depth a maximum of 4 feet. Due to the weather conditions prior to and during the discharge, Sand Creek was flooded with turbulent flow.

- B. Describe the location of the waterway in relation to the facility or vehicle responsible for the discharge (i.e. distance, direction and elevation, etc.)

Sand Creek is north of the facility approximately 450 feet downslope.

- C. State the nature and quantity of substance reaching the water described above.

The material that overflowed from the lower oil water separator was a mix of slop oil and stormwater creating an oily water mixture. The quantity of slop oil that reached Sand Creek was approximately 1 gallon.

- D. State the quantity of substance which did not reach the waterway described above.

The quantity of the material that did not reach the waterway was approximately 463 gallons.

- E. Describe and name the waters to which the affected waterway is connected or flows into, include their uses.

Sand Creek flows into the South Platte River. The South Platte River is designated a recreational use waterway.

- F. At the time of the incident, was there a flow of water present?

Yes.

- G. Did the material cause any film, sheen, discoloration, or iridescent appearance on the surface of any water or adjoining shorelines? If yes, describe and give the name and title of the person making the observation.

Yes. There was a small amount of oil sheen along the south bank of Sand Creek immediately downstream of CRC's discharge. The intermittent sheen appeared as a thin ribbon approximately 1" – 1.5" in width and was observed for a distance of approximately 15 feet. The sheen quickly dissipated once the flow of discharge was eliminated. An investigation downstream of CRC to the South Platte showed no sign of a sheen.

- H. Did the material cause any sludge or emulsion to be deposited on the adjoining shorelines or beneath the surface of the waters described above? If yes, describe.

No.

13. Describe any damage to animal life (i.e. number and species of injured or dead fish, birds, animals, insects, etc.) or vegetation (i.e. how many feet, miles, of land was affected, type of vegetation, crops, timber, forest, prairie grasses, scrub, etc.).

No damage to animal life was detected. Approximately 20 feet of vegetation was excavated with the contaminated soil within the wastewater treatment discharge canal. The vegetation removed were common weeds that had come in contact with the discharge of oily water in the wastewater treatment canal.

14. Are there any sensitive environments, wildlife habitats or refuges, endangered species, water wells, or drinking water intakes in the area? If yes, list them and state their locations from the facility or area of the spill.

No.

15. When (date and time) and how was the release controlled?

The release was controlled at 6:45 AM, approximately 5 minutes following discovery. The release was traveling along the wastewater treatment discharge canal on the north end of the facility. Bales of straw were immediately placed in the canal to slow flow and filter out the release. At 6:45 AM the flow of water into the canal was eliminated by shutting off the wastewater treatment system and flow out of the canal was stopped by damming up the canal to stop any flow into Sand Creek.

16. Describe the steps, including dates and times of each measure, taken to clean up the release.

8/18/2000

6:40AM	Operations discovered the discharge of oily water to the wastewater treatment canal.
6:45AM	Bales of straw were placed in the wastewater canal (~4 feet wide) to slow flow and absorb the discharge. The wastewater treatment discharge to the creek was stopped.
7:00AM	Oil booms were placed in the canal and a dam across the canal discharge was erected with dirt to eliminate all flow out of the canal.
8:15AM	Tri-County Health Department representatives arrived onsite to assess the situation. Tri-County was led by Kenneth L. Conright, Environmental Health Manager. Tri-County accompanied by CRC personnel inspected the oil migration path, Sand Creek, and inspected downstream of Sand Creek up to the South Platte confluence.
8:20AM	A vacuum truck was utilized to pull out all the oily water in the wastewater treatment canal.
8:40AM	The facilities environmental response contractor arrived and began laying a boom across Sand Creek as a precautionary measure.
9:00AM	Remediation of soil and vegetation along the canal began. Also vacuum trucks were utilized to clean up the small pools of stormwater mixed with oil that remained along the west side of the refinery.
11:55AM	Roll-off boxes arrived to hold the contaminated soil and vegetation excavated during remediation. Soil remediation along the west side of the refinery and in the wastewater canal continued.

4:10PM	Refinery personnel did a facility walk through along the path of migration to ensure that all contaminated water and soil had been remediated.
4:30PM	Tri-County representatives again visited the site to assess clean-up efforts and review the facilities short term contingency plan.
8/21/00	
7:00AM	Refinery personnel inspected the wastewater canal for any signs of contamination. Clean up efforts were deemed successful.
7:15AM	Booms and absorbent material were removed from the wastewater treatment canal and the temporary dam was removed.
7:30AM	Wastewater treatment flow was restored to the canal.

17. Describe steps taken to mitigate any environmental damage.

Once a release was detected straw bales were placed in the flow of stormwater to help slow flow and filter out any oil that may be present. Flow from the wastewater treatment system and the stormwater holding pond were eliminated. Also a boom was placed across the width of Sand Creek as a precautionary measure to ensure no oil migrated downstream.

18. Describe in detail the cause (i.e. equipment failure, operator error, inadequate procedures or maintenance, etc.) of the incident. Describe events leading up to the incident.

CRC's wastewater system utilizes three oil water separators to accept process water and surface water within the facility. The separators take this flow of water and separate the oil from the water. The oil side of the separator is then pumped to a tank for re-processing of slop oil. The water then continues through the facilities wastewater treatment system.

The release of oily water that occurred on 8/18/2000 was a result of a large amount of water entering the lower oil water separator in a short period of time. This large volume of water was due to a severe rainstorm that dumped approximately 2.9 inches of rain in a little over an hour. Due to the large volume of offsite stormwater the lower oil water separator's pumps were unable to keep up with the flow. As a result the lower oil water separator's level quickly rose and overflowed. Once the rainfall dissipated the lower oil water separators pumps caught up and lowered the level of the tank and eliminated the release.

19. Describe any measures taken to prevent any future discharges/spills.

A low point along the facilities perimeter was identified that allows stormwater to flow into the refinery during heavy storm events. At this low point the refinery is in the process of engineering a barrier and drainage system to divert this flow and keep it out of the facility boundaries. This will help decrease the total volume of stormwater that is sent to the oil water separators for treatment. The facility is also currently amending the current stormwater contingency plan to divert water into containment areas when heavy storm events occur. CRC also plugged the lower oil water separator piping that was the initial point of overflow.

20. List the federal, state, tribal, and/or local agencies, if any, to which the incident was reported. Indicate the date and time of notification and the official contacted. Please give name, phone number and address of any of their representatives who were present at the incident.

National Response Center 8/18/2000 7:00 AM Report # 539092

Tri-County Health Dept. 8/18/2000 8:00 AM Attempted at 7AM no answer till 8AM. Representatives (Kenneth L. Conright) arrived on site at 8:30AM to assess the situation and ensure containment and cleanup efforts were adequate. They returned at 4:30PM to inspect the facilities cleanup efforts and to review our short term contingency plans.

Colorado Dept. Health & Env. 8/18/2000 7:47 AM Call directed to the Colorado Emergency Response Center . Details were left with the operator.

Columbine WWT Facility 8/18/2000 7:39 AM Steve Mcfaddin (Water Supply Manager), was contacted and notified of incident.

Adams County 8/18/2000 7:46 AM Left details of the incident with the operator.

US EPA 8/18/2000 7:44 AM The call was directed to the NRC.

21. Has the owner or operator been assessed any fines for this incident by any other government entity? If yes, give the name of the agency (ies), amount of the fine, and the date assessed.

No.

22. Are there additional persons you believe to have knowledge of the facts surrounding this incident? If so, list their names, phone numbers, and current addresses.

Jay Cleary, Refinery Manager	303-227-2468	5800 Brighton Blvd. Commerce City, CO
Terry Stier, PSM Manager	303-227-2472	5800 Brighton Blvd. Commerce City, CO
Jerry Bennet, Safety Manager	303-227-2478	5800 Brighton Blvd. Commerce City, CO
Diane Johnson, Env. Manager	303-227-2405	5800 Brighton Blvd. Commerce City, CO

23. Describe in detail any previous spills, discharges or releases that have occurred from this facility or vehicle within the past five years. Use the format below:

<u>Date</u>	<u>Source</u>	<u>Substance</u>	<u>Quantity</u>	<u>Waterway Affected/Threatened</u>	<u>Cause</u>
-No additional spill, discharge, or release has occurred at CRC in the last five years that has affected or threatened a waterway.					

24. If the oil was released from a facility, is that facility subject to the Spill Prevention, Control and Countermeasures (SPCC) regulations (Yes or No)? If yes, please provide a copy of the SPCC plan.

Yes, SPCC plan attached. See attachment #5.

- A. State the total above ground storage tank capacity and the total underground storage tank capacity at the facility. Please state capacity, not actual amounts.

Total above ground capacity = 42,710,800 gallons

Total below ground capacity = 800 gallons

- B. If the facility has also submitted a Facility Response Plan (FRP) to EPA, please provide the FRP number and the date it was submitted to EPA.

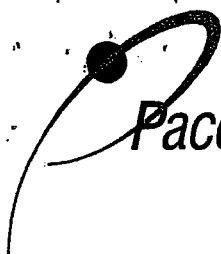
FRP submitted March 10, 1997

25. List any applicable EPA, State, County or local governmental identification or permit numbers (i.e. NPDES, RCRA, etc.), using the following format.

<u>Number</u>	<u>Facility/Unit Assigned To</u>	<u>Issuing Agency</u>	<u>Date Issued</u>
NPDES			
COG-600000	Colorado Refining Co./WWTS	CO Dept. Health & Env.	6/1997

26. List your name, address, phone number, and relationship to the owner or operator of the involved facility or vehicle.

Mark Suyama
5800 Brighton Blvd.
Commerce City, Colorado 80022
(303)227-2414
Environmental Engineer for Colorado Refining Company



Pace Analytical™

www.pacelabs.com

Attachment #3

Pace Analytical Services, Inc.

900 Gemini Avenue

Houston, TX 77058

Phone: 281.488.1810

Fax: 281.488.4661

August 25, 2000

Ms. Diane Johnson
Ultramar Diamond Shamrock
5800 Brighton Boulevard
Commerce City, CO 80022

RE: Pace Project Number: 8517025
Client Project ID: Cont. Soil/SW

Dear Ms. Johnson:

Enclosed are the analytical results for sample(s) received by the laboratory on August 24, 2000. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Amanda Bourg

Amanda Bourgeois
Project Manager

Enclosures

REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, Inc.
900 Gemini Avenue
Houston, TX 77058
Phone: 281.488.1810
Fax: 281.488.4661

DATE: 08/25/00
PAGE: 1

Ultramar Diamond Shamrock
5800 Brighton Boulevard
Commerce City, CO 80022

Pace Project Number: 8517025
Client Project ID: Cont. Soil/SW

Attn: Ms. Diane Johnson
Phone: 580-221-3155

Solid results are reported on a wet weight basis

Pace Sample No:	851649451	Date Collected:	08/21/00	Matrix:	Soil
Client Sample ID:	BOX18112	Date Received:	08/24/00		

Parameters	Results	Units	PRL	Analyzed	Analyst	CAS#	Footnotes
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GC Volatiles

SW8021 Aromatics, Medium Soil							
Benzene	ND	ug/kg	50	08/25/00	WRIC	71-43-2	
Ethylbenzene	ND	ug/kg	50	08/25/00	WRIC	100-41-4	
Toluene	ND	ug/kg	50	08/25/00	WRIC	108-88-3	
Xylene (Total)	319	ug/kg	50	08/25/00	WRIC	1330-20-7	
4-Bromofluorobenzene (S)	117	%		08/25/00	WRIC	2164-17-2	
Date Prepared				08/25/00			

Comments : Sample was received with temperature of 21.5 degrees C. Proceeded with analysis per client request.

REPORT OF LABORATORY ANALYSIS

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ULTRAMAR DIAMOND SHAMROCK
C O R P O R A T I O N

For _____

Date _____

Subject _____

By _____

Maximum Amount of Oil Released on 8/18/00

Total amount of oil in separator = 2664 gal

Total amount of oil removed via skimmer pump = 2200 gal

$(2664 \text{ gal}) - (2200 \text{ gal}) = 464 \text{ gal}$

ULTRAMAR DIAMOND SHAMROCK
C O R P O R A T I O N

For _____

Date 1/15/01

Subject Attachment #2

By ME

- Lower Oil/Water Separator

Length = 43 Ft
Width = 22 Ft
Depth = 9.5 Ft

Depth of Skop Oil ≈ 0.25 Ft
Depth of Oil/Water Emulsion ≈ 0.5 Ft
Depth of Water ≈ 8.6 Ft

- Total Volume of Oil Contained in Separator

$$(0.25 \text{ Ft})(43 \text{ Ft})(22 \text{ Ft}) = 237 \text{ Ft}^3 \text{ Oil}$$

$$(237 \text{ Ft}^3 \text{ Oil})(7.5) = 1778 \text{ gal Oil}$$

$$(0.5 \text{ Ft})(43 \text{ Ft})(22 \text{ Ft}) = 473 \text{ Ft}^3 \text{ Oil/Water Emulsion}$$

$$(473 \text{ Ft}^3 \text{ Emulsion})(7.5) = 3547 \text{ gal Emulsion}$$

→ Assume Emulsion is a 25/75 Oil/Water Mixture
= 886 gal of Oil in Emulsion

$$(1778 \text{ gal}) + (886 \text{ gal}) = 2664 \text{ gal of Oil in Separator}$$

- Oil Removed From Separator via Oil Skimmer Pump

Lower Oil/Water Separator Skimmer Pump = 15 gpm

Duration Skimmer Pump in Operation (3 AM - 6:40 AM) ≈ 220 min

$$(10 \text{ gpm})(220 \text{ min}) = 2200 \text{ gal of Oil Skimmed}$$



Pace Analytical Services, Inc.
900 Gemini Avenue
Houston, TX 77058
Phone: 281.488.1810
Fax: 281.488.4661

DATE: 08/25/00
PAGE: 2

Pace Project Number: 8517025
Client Project ID: Cont. Soil/SW

Pace Sample No: 851649452
Client Sample ID: BOX18108

Date Collected: 08/21/00
Date Received: 08/24/00
Matrix: Soil

Parameters	Results	Units	PRL	Analyzed	Analyst	CAS#	Footnotes
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GC Volatiles

SW8021 Aromatics, Medium Soil

Method: EPA 8021

Prep Method: See analytical meth

Benzene	ND	ug/kg	50	08/25/00	WRIC	71-43-2	
Ethylbenzene	ND	ug/kg	50	08/25/00	WRIC	100-41-4	
Toluene	ND	ug/kg	50	08/25/00	WRIC	108-88-3	
Xylene (Total)	127	ug/kg	50	08/25/00	WRIC	1330-20-7	
4-Bromofluorobenzene (S)	116	%		08/25/00	WRIC	2164-17-2	
Date Prepared				08/25/00			

Comments : Sample was received with temperature of 21.5 degrees C. Proceeded with analysis per client request.

REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, Inc.

900 Gemini Avenue

Houston, TX 77058

Phone: 281.488.1810

Fax: 281.488.4661

DATE: 08/25/00

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Pace Project Number: 8517025

Client Project ID: Cont. Soil/SW

Pace Sample No: 851649453
Client Sample ID: BOX2151

Date Collected: 08/21/00
Date Received: 08/24/00

Matrix: Soil

Parameters	Results	Units	PRL	Analyzed	Analyst	CAS#	Footnotes
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GC Volatiles

SW8021 Aromatics, Medium Soil

Method: EPA 8021

Prep Method: See analytical meth

Benzene	ND	ug/kg	50	08/25/00	WRIC	71-43-2	
Ethylbenzene	ND	ug/kg	50	08/25/00	WRIC	100-41-4	
Toluene	ND	ug/kg	50	08/25/00	WRIC	108-88-3	
Xylene (Total)	145	ug/kg	50	08/25/00	WRIC	1330-20-7	
4-Bromofluorobenzene (S)	111	%		08/25/00	WRIC	2164-17-2	
Date Prepared				08/25/00			

Comments : Sample was received with temperature of 21.5 degrees C. Proceeded with analysis per client request.

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900 Gemini Avenue

Houston, TX 77058

Phone: 281.488.1810

Fax: 281.488.4661

DATE: 08/25/00

PAGE: 4

Pace Project Number: 8517025

Client Project ID: Cont. Soil/SW

Pace Sample No: 851649454
Client Sample ID: BOX18306

Date Collected: 08/21/00
Date Received: 08/24/00

Matrix: Soil

Parameters	Results	Units	PRL	Analyzed	Analyst	CAS#	Footnotes
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GC Volatiles

SW8021 Aromatics, Medium Soil

Method: EPA 8021

Prep Method: See analytical meth

Benzene	ND	ug/kg	50	08/25/00	WRIC	71-43-2
Ethylbenzene	ND	ug/kg	50	08/25/00	WRIC	100-41-4
Toluene	ND	ug/kg	50	08/25/00	WRIC	108-88-3
Xylene (Total)	ND	ug/kg	50	08/25/00	WRIC	1330-20-7
4-Bromofluorobenzene (S)	106	%		08/25/00	WRIC	2164-17-2
Date Prepared				08/25/00		

Comments : Sample was received with temperature of 21.5 degrees C. Proceeded with analysis per client request.

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Pace Analytical Services, Inc.

900 Gemini Avenue

Houston, TX 77058

Phone: 281.488.1810

Fax: 281.488.4661

DATE: 08/25/00

PAGE: 5

Pace Project Number: 8517025

Client Project ID: Cont. Soil/SW

PARAMETER FOOTNOTES

ND	Not Detected
NC	Not Calculable
PRL	Pace Reporting Limit
(S)	Surrogate

REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, Inc.
 900 Gemini Avenue
 Houston, TX 77058
 Phone: 281.488.1810
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QUALITY CONTROL DATA

DATE: 08/25/00
 PAGE: 6

Ultramar Diamond Shamrock
 5800 Brighton Boulevard
 Commerce City, CO 80022

Pace Project Number: 8517025
 Client Project ID: Cont. Soil/SW

Attn: Ms. Diane Johnson
 Phone: 580-221-3155

QC Batch ID: 42080
 Analysis Method: EPA 8021
 Associated Pace Samples:

QC Batch Method: See analytical meth
 Analysis Description: SW8021 Aromatics, Medium Soil
 851649451 851649452 851649453 851649454

METHOD BLANK: 851649556
 Associated Pace Samples:

Parameter	Units	851649451	851649452 Method Blank Result	851649453	851649454	Footnotes
Benzene	ug/kg		ND	50		
Ethylbenzene	ug/kg		ND	50		
Toluene	ug/kg		ND	50		
Xylene (Total)	ug/kg		ND	50		
4-Bromofluorobenzene (S)	%		87			

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 851649558 851649559									
Parameter	Units	851649298	Spike Conc.	Matrix Spike Result	Spike % Rec	Matrix Sp. Dup. Result	Spike Dup % Rec	RPD	Footnotes
Benzene	ug/kg	0	2500	2819	113	2902	116	3	
Ethylbenzene	ug/kg	0	2500	2809	112	2905	116	3	
Toluene	ug/kg	9.657	2500	2822	112	2903	116	3	
4-Bromofluorobenzene (S)					101		102		

LABORATORY CONTROL SAMPLE: 851649557

Parameter	Units	Spike Conc.	LCS Result	Spike % Rec	Footnotes
Benzene	ug/kg	2500	2765	111	
Ethylbenzene	ug/kg	2500	2974	119	
Toluene	ug/kg	2500	2926	117	
4-Bromofluorobenzene (S)				100	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
 without the written consent of Pace Analytical Services, Inc.

Evergreen Analytical, Inc.
4036 Youngfield St., Wheat Ridge, CO 80033
(303) 425-6021

Methods 602/8020 and 5030/8015 Modified Data Report

Client Sample ID : Slop Oil

Lab Sample ID : 99-0186-08A

Date Collected : 01/06/1999

Date Received : 01/14/1999

Client Project ID : NESHAP 98-2

Lab Work Order : 99-0186

Sample Matrix : Oil

Method: E602/SW8020A

BTEX

Date Prepared : 01/18/1999

Lab File ID : TVB30118\032R0101.D

Effective Dilution : 25000

Date Analyzed : 01/19/1999

Method Blank : MEB011899

Compound Name	CAS Number	Concentration	RL	Units
Benzene	71-43-2	180000	100000	µg/Kg
Toluene	108-88-3	1400000	100000	µg/Kg
Ethylbenzene	100-41-4	280000	100000	µg/Kg
m,p-Xylene	1330-20-7	2000000	100000	µg/Kg
o-Xylene	95-47-6	610000	100000	µg/Kg
Surrogate Recovery:	1,2,4-Trichlorobenzene	96%	33 - 159	QC Limits

Comments:

Notes: Total Xylenes consist of three isomers, two of which co-elute. The Xylene RL is for a single peak.
Confirmation analysis was not performed.

Qualifiers:

E = Extrapolated value. Value exceeds calibration range.

U = Compound analyzed for, but not detected.

B = Compound also found in the blank.

J = Indicates an estimated value when the compound is detected, but is below the Reporting Limit.

S = Spike Recovery outside accepted recovery limits.

Definitions:

RL = Reporting Limit.

TVH = Total Volatile Hydrocarbons

TEH = Total Extractable Hydrocarbons

SLR

Analyst

Approved

1/19/1999 2:33 PM

PART I
GENERAL INFORMATION

7. Potential Spills-Prediction & Control:

Source	Major Type Of Failure	Total Quantity (bbls)	Rate (bbls/hr)	Direction of Flow	Secondary Containment
A. South ½ of STF	T-6	200,000	Contained	Contained	Yes
B. North ½ of STF	T-26	55,000	Contained	Contained	Yes
C. ETF	T-34	65,000	Contained	Contained	Yes
D. HVGO TF	T-31	40,000	Contained	Contained	Yes
E. WWT TF	T-19	20,000	Contained	Contained	Yes
F. Slop TF	T-16	1,400	Contained	Contained	Yes
G. Process Area	Pipes or Vessels	1,300	Contained	To Oily Sewer	Water Treatment System
H. Oxygenate Rail Car Facility	Tank Car	750	Contained	Contained	Yes
I. Trucked Crude Facility	Truck Tank	225	Contained	Contained	Yes
J. Old Crude Settler	10-V-101	385	Contained	Contained	Yes
K. New Crude Settler	10-V-114	385	Contained	Contained	Yes

Name of facility Colorado Refining Company

Operator Same

Attachment #4

Rule Engineering, LLC
Solutions to Regulations for Industry

October 2, 1998

Ms. Diane Johnson
Environmental Manager
Ultramar Diamond Shamrock
5800 Brighton Boulevard
Commerce City, CO 80022

**RE: Spill Prevention Control & Countermeasure Plan
Colorado Refining Company**

Dear Ms. Johnson:

Attached please find the certified SPCC Plan for the CRC Refinery that is submitted to you for management approval. Rule Engineering, LLC (Rule), who is familiar with the regulations given in 40 CFR 112, has examined the refinery and certifies that this plan is in accordance with good engineering practices.

Rule appreciates the opportunity to provide this service for CRC.

Sincerely:

Dale Edwards, PE

Dale Edwards, PE
Senior Engineer

Attachment

Approved:

Michael A. Brown

Michael A. Brown, PE
Principal Engineer & Managing Member



Pace Analytical Services, Inc.

900 Gemini Avenue

Houston, TX 77058

Phone: 281.488.1810

Fax: 281.488.4661

DATE: 08/25/00

PAGE: 7

Pace Project Number: 8517025

Client Project ID: Cont. Soil/SW

QUALITY CONTROL DATA PARAMETER FOOTNOTES

Consistent with EPA guidelines unrounded concentrations are displayed and have been used to calculate % Rec and RPD values.

ND	Not Detected
NC	Not Calculable
PRL	Pace Reporting Limit
RPD	Relative Percent Difference
(S)	Surrogate

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

SPILL PREVENTION CONTROL & COUNTERMEASURE PLAN

PART I GENERAL INFORMATION

1. Name of facility Colorado Refining Company
2. Type of facility Onshore Facility - Petroleum Refinery
3. Location of facility 5800 Brighton Blvd.
Commerce City, CO 80022
4. Name and address of owner or operator:
Name Same as above.
Address Same as above.
5. Designated person accountable for oil spill prevention at facility:
Name and title: Jim Gillingham - Refinery Manager
6. Facility experienced a reportable oil spill event during the twelve months prior to Jan. 10, 1974 (effective date of 40 CFR, Part 112). (If YES, complete Attachment #1). No.

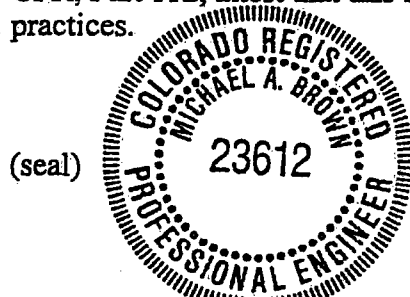
MANAGEMENT APPROVAL

This SPCC Plan will be implemented as herein described.

Signature _____
Name Jim Gillingham
Title Refinery Manager

CERTIFICATION

I hereby certify that I have examined the facility, and being familiar with the provisions of 40 CFR, Part 112, attest that this SPCC Plan has been prepared in accordance with good engineering practices.



Rule Engineering, LLC; Michael A. Brown, PE
Printed Name of Registered Professional Engineer

Michael A. Brown
Signature of Registered Professional Engineer

Date 10-6-98

Registration No. 23612 State CO

PART I
GENERAL INFORMATION

Discussion: Quantities from failures are prevented from leaving the facility by secondary containment: therefore, rate and direction of flow from spills do not apply. For sources A, B, D, E, F, G, & K, in the event a spill escapes its secondary containment, a final discharge diversion structure in the form of a drop gate dam is provided. Sources A, B, & C have earthen dikes for secondary containment. Sources D, E, F, J, & K have reinforced concrete wall secondary containment. Sources G & I are concrete paved areas with containment curbs and an oily water sewer system. Source H employs a drainage cutoff ditch which also serves as a catchment basin to prevent any offsite release. There are no valves draining secondary containment except for the Product Loading Dock storm water valve which is only opened by authorized personnel.

Periodic and systematic groundwater monitoring and buried pipe pressure testing are performed to detect underground leakage.

The maximum product height allowed in T-31 is 31 feet.

Maps are attached showing major features and ground water monitoring wells.

8. Containment or diversionary structures or equipment to prevent oil from reaching navigable waters are practicable. (If NO, complete Attachment #2). Yes

9. Inspections and Records

A. The required inspections follow written procedures. Yes

B. The written procedures and a record of inspections, signed by the appropriate supervisor or inspector, are attached. No

Discussion: Inspections of major process equipment are done by our API certified refinery inspector. Applicable inspection procedures are attached. Groundwater monitoring and buried line pressure test data records are available at the Refinery.

10. Personnel, Training, and Spill Prevention Procedures

A. Personnel are properly instructed in the following:

(1) operation and maintenance of equipment to prevent oil discharges, and Yes

(2) applicable pollution control laws, rules, and regulations. Yes

Describe procedures employed for instruction: On-the-job training of new personnel by experienced personnel and verbal instructions by the supervisor of critical aspects of the job. Refinery emergency procedure actions are posted at operators' telephones so appropriate authorities may be notified.

B. Scheduled prevention briefings for the operating personnel are conducted frequently enough to assure adequate understanding of the SPCC Plan. Yes

Describe briefing programs: Quarterly meetings are held by the product supply department to administer training and discuss issues. Issues can include, but are not limited to, recent spills or "near misses," operational difficulties, and changes in policies and procedures.

Name of facility Colorado Refining Company

Operator Same

PART II, ALTERNATE A
DESIGN AND OPERATING INFORMATION
ONSHORE FACILITY (EXCLUDING PRODUCTION)

A. Facility Drainage

1. Drainage from diked storage areas is controlled as follows (include operating description of valves, pumps, ejectors, etc. (Note: Flapper-type valves should not be used);

All drainage from diked areas is routed to an oily water separator or the waste water treatment plant. Manually operated pumping systems or the vacuum truck is used to transfer drainage from all diked areas except the New Crude Settler. A gravity sewer is used to transfer drainage from the New Crude Settler.

2. Drainage from undiked areas is controlled as follows (include description of ponds, lagoons, or catchment basins and methods of retaining and returning oil to facility):

For the trucked crude facility, drainage is controlled by gravity flow inside a containment curb to a doublewalled FRP process sewer system & a doublewalled FRP UST (No corrosion protection is required) with high level alarm. The water is transferred by vacuum truck to an oily water separator in the onsite waste water treatment system.

For the process areas, drainage is controlled by gravity flow inside of curbs and fire walls to the process sewer system and to an oily water separator. Oil is returned to facility, water is pumped to biological treatment system. Treated water is pumped to Sand Creek. Separator and treatment systems employ pump transfer with equal standby pumping.

The Oxygenate Railcar Facility uses a drainage cutoff ditch/catchment basin where oily drainage is transferred by vacuum truck to an oily water separator in the onsite waste water treatment system.

There are no partially buried tanks at this facility.

3. The procedure for supervising the drainage of rain water from secondary containment into a storm drain or an open watercourse is as follows (include description of (a) inspection for pollutants and (b) method of valving security).

For control in process area see A-2. In diked areas, water is contained or transferred to waste water treatment by pumping if required. In all cases, for these areas, drainage is treated through the onsite refinery WWTS before being discharged, under permit, to Sand Creek.

Name of facility

Colorado Refining Company

Operator

Same

PART II, ALTERNATE A
DESIGN AND OPERATING INFORMATION
ONSHORE FACILITY (EXCLUDING PRODUCTION)

B. Bulk Storage Tanks

1. Describe tank design, materials of construction, fail-safe engineering features, and if needed, corrosion protection:

Cylindrical tanks above grade of welded steel plate based on sand cushion or concrete ring foundation. Corrosion protection of walls and roof by paint. Berms promote drainage away from tanks. Tank paint periodically renewed. Tanks have gauging devices which provide immediate indication of tank level. Where economically feasible, tanks are constructed with a leak detection membrane beneath steel floor plates. FRP or epoxy linings are used in tanks experiencing interior corrosion. Tanks are gauged daily and gauges are calibrated monthly. Pumpers, gaugers, and product supply management communicate by 2-way radio.

2. Describe secondary containment design, construction materials, and volume.

Secondary containments are mostly dikes from selected native soil. The soils used have the properties to contain a spill. In limited space areas, walls are made of reinforced concrete. No concrete blocks are used as dikes. Removable gates are kept closed and may be opened by authorized personnel only. All dikes will contain the volume of the largest tank within it, plus 6-inches of rain. Any portable tanks including drums and totes are located so that a total failure will not result in a release from the facility.

3. Describe tank inspection methods, procedures, and record keeping:

Tanks in all tank farms and plant areas are manually gauged every day and the gauger is on the alert for any leaks or tank disorders, which are reported to the Product Supply Manager. The cause of any spill or leak is isolated. Repair and correction are initiated and tracked through the work order system. Any recoverable product is vacuumed up. Any contaminated soil is removed and disposed of in accordance with State and Federal regulations. Daily inventory logs are used to detect any disorder. Periodic mechanical inspections are done by our refinery inspector, using the attached procedure INSTK02.001. Records are kept at the refinery.

4. Internal heating coil leakage is controlled by one or more of the following control factors:

- (a) Monitoring the steam return or exhaust lines for oil. NA
Describe monitoring procedure: Steam coils are no longer used in bulk storage tanks.
- (b) Passing the steam return or exhaust lines through a settling tank, skimmer, or other separation system. NA
- (c) Installing external heating systems. NA

5. Disposal facilities for plant effluents discharged into navigable waters are observed frequently for indication of possible upsets which may cause an oil spill event.

Describe method and frequency of observations: Oil separators skim and recycle oil. Water passing underflow weir is then biologically treated and discharged through a sand filter. Daily samples of effluent water are taken and checked for quality standards. Through daily routine of operation throughout the plant, operators are constantly checking for spills and leaks.

Name of facility Colorado Refining Company

Operator Same

PART II, ALTERNATE A
DESIGN AND OPERATING INFORMATION
ONSHORE FACILITY (EXCLUDING PRODUCTION)

{Response to statements should be: YES, NO, or NA (Not Applicable).}

E. Security

1. Plants handling, processing, or storing oil are fenced. Yes
2. Entrance gates are locked and/or guarded when the plant is unattended or not in production. Yes
3. Any valves which permit direct outward flows of a tank's contents are locked closed when in non-operating or standby status. See Below
4. Starter controls on all oil pumps in non-operating or standby status are:
 (a) locked in the off position: No
 (b) located at site accessible only to authorized personnel. Yes
5. Discussion of items 1 through 4 as appropriate:

Add #3: All valves on active tanks or vessels are tied to an enclosed piping system or are blinded. Water draw-off valves are not, but are in standby service and are operated only by authorized personnel. This is typical for all valves.

There are shutoff valves on all transfer lines to loading and unloading facilities. Bottom loading docks are also fit with dry breaks to minimize spillage caused by uncoupling.

6. Discussion of the lighting around the facility: The ETF and the STF have 100' high mast, cluster lights for area lighting. In general, the facility lighting is adequate to detect a spill occurring during the hours of darkness.

Name of facility

Colorado Refining Company

Operator

Same

PART II, ALTERNATE A
DESIGN AND OPERATING INFORMATION
ONSHORE FACILITY (EXCLUDING PRODUCTION)

{Response to statements should be: YES, NO, or NA (Not Applicable)}

D. Facility Tank & Car Tank Truck Loading/Unloading Rack

Tank car and tank truck loading/unloading occurs at the facility. (If YES, complete 1 through 5 below).

1. Loading/unloading procedures meet the minimum requirements and regulations of the Department of Transportation. Yes
2. The unloading area has a quick drainage system. Yes
3. The containment system will hold the maximum capacity of any single compartment of a tank truck loaded/unloaded in the plant. Yes
Describe containment system design, construction materials, and volume:
All truck spills are contained in a catch basin and drained to an oil separator or UST where they are then transferred by vacuum truck to the oil separator. The Oxygenate RR facility has an earthen cut off trench and catchment basin to prevent offsite release. Any spills at the heavy oil tank car area would be contained on-site at the loading area.
4. An interlocked warning light, a physical barrier system, or warning signs are provided in loading/unloading areas to prevent vehicular departure before disconnect of transfer lines. Yes
Describe methods, procedures, and/or equipment used to prevent premature vehicular departure:
If a truck does leave prior to disconnecting transfer line, the transfer is automatically stopped. There are warning signs posted.
5. Drains and outlets on tank trucks and tank cars are checked for leakage before loading/unloading or departure. Yes

Name of facility

Colorado Refining Company

Operator

Same

PART II, ALTERNATE A
DESIGN AND OPERATING INFORMATION
ONSHORE FACILITY (EXCLUDING PRODUCTION)

{Response to statements should be: YES, NO, or NA (Not Applicable).}

C. Facility Transfer Operations, Pumping, and In-Plant Process*

1. Corrosion protection for buried pipelines:

- (a) Pipelines are wrapped and coated to reduce corrosion. Old Lines - No
New Lines - Yes
- (b) Cathodic protection is provided for pipelines if determined necessary by electrolytic testing. NA *
- (c) When a pipeline section is exposed, it is examined and corrective action taken as necessary. Yes
Unprotected pipe when exposed is examined for integrity and wrapped before backfilling whenever necessary. All new steel pipe is coated and wrapped.

2. Pipeline terminal connections are capped or blank-flanged and marked if the pipeline is not in service or on standby service for extended periods. Yes

Describe criteria for determining when to cap or blank-flange:

For abandonment line is permanently capped or blinded. For standby service, line is valved and blinded if necessary.

3. Pipe supports are designed to minimize abrasion and corrosion and allow for expansion and contraction. Yes

Describe pipe support design:

Supports are steel structures of various shapes. Vertical members are fireproofed to required heights. Sliding pads are provided for most process piping.

4. Describe procedures for regularly examining all above-ground valves and pipelines (including flange joints, valve glands and bodies, catch pans, pipeline supports, locking of valves, and metal surfaces):

Daily visual inspection by operators, plant personnel, and periodic inspection by our refinery inspector. Also by terms of outside inspectors during turnarounds. Our inspection procedure for piping system, INSPPGO02.000, is attached.

5. Describe procedures for warning vehicles entering the facility to avoid damaging above-ground piping:

By physical barriers, warning signals, or lights.

* Periodic and systematic groundwater monitoring and buried pipe pressure testing are performed. When feasible buried lines are replaced with above ground lines.

Name of facility

Colorado Refining Company

Operator

Same

Evergreen Analytical, Inc.
4036 Youngfield St., Wheat Ridge, CO 80033
(303) 425-6021

Methods 602/8020 and 5030/8015 Modified Data Report

Client Sample ID : Slop Oil

Lab Sample ID : 99-1186-19A

Date Collected : 03/09/1999

Date Received : 03/12/1999

Client Project ID : Total Petroleum

Lab Work Order : 99-1186

Sample Matrix : Discharge Water

Method: E602/SW8020A

BTEX

Date Prepared : 03.26.1999

Lab File ID : TVB30325/054R0101.D

Effective Dilution : 20000

Date Analyzed : 03.26.1999

Method Blank : MB3032699

Compound Name	CAS Number	Concentration	RL	Units
Benzene	71-43-2	320000	8000	µg/L
Toluene	108-88-3	1900000	8000	µg/L
Ethylbenzene	100-41-4	380000	8000	µg/L
m,p-Xylene	1330-20-7	2300000	8000	µg/L
o-Xylene	95-47-6	910000	8000	µg/L
Surrogate Recovery:	1,2,4-Trichlorobenzene	131%	64 - 133	QC Limits

Comments:

Notes: Total Xylenes consist of three isomers, two of which co-elute. The Xylene RL is for a single peak.
 Confirmation analysis was not performed.

Qualifiers:

E - Extrapolated value. Value exceeds calibration range.

N = Compound analyzed for, but not detected.

A = Compound not listed in the table.

L = Detected in amount below the Reporting Limit.

U = Value below the Reporting Limit.

Definitions:

RL - Reporting Limit

TVH - Total Volatile Hydrocarbons

TEH - Total Extractable Hydrocarbons

SIR
Analyst

[Signature]
Approved

3/29/1999 5:12 PM

MAPS

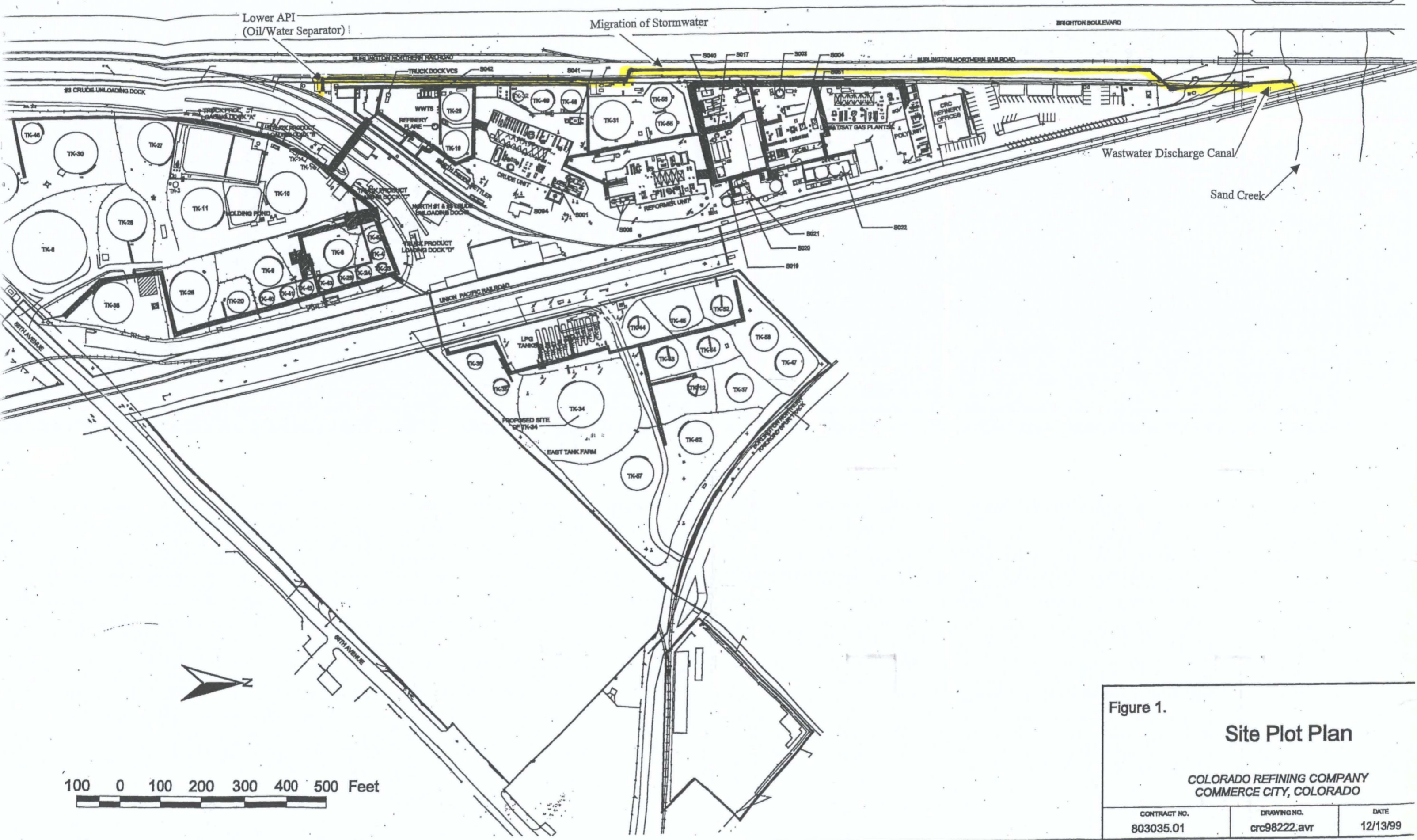


Figure 1.

Site Plot Plan

COLORADO REFINING COMPANY
COMMERCE CITY, COLORADO

CONTRACT NO. 803035.01	DRAWING NO. crc98222.avr	DATE 12/13/99
---------------------------	-----------------------------	------------------

INSPECTION PROCEDURES

REV: 1
DATE: 2-24-95
SUPERVISOR: W. J. Smith
APPROVED: L. Brown

TOTAL PETROLEUM INC.
DENVER REFINERY
5800 BRIGHTON BLVD.
COMMERCE CITY, CO 80022

ATMOSPHERIC TANK INSPECTION PROCEDURE

INSTK02.001

1.0 SCOPE

This procedure defines the activities of the Inspection organization in relation to Atmospheric Pressure Aboveground Storage Tanks.

2.0 APPLICATION

This program applies to QA/QC Inspectors, Operators, and Environmental personnel.

3.0 DEFINITIONS

3.0.1 Storage Tanks shall refer only to carbon steel or low alloy steel Aboveground Storage Tanks designed to API 650 or it's predecessor 12C.

4.0 REFERENCE DOCUMENTS

API 653

API Guide for Inspection of Refinery Equipment

Federal 40 CFR Part 60

Colorado State Air Regulation # 7

5.0 INSPECTOR REQUIREMENTS

Certification to API 653, or under the supervision of an API 653 certified Inspector.

CRC U.T. Thickness Gauging Certification

6.0 ACTIONS

6.1 ROUTINE IN-SERVICE INSPECTION

The external condition of the tank shall be monitored by close visual inspection from the ground on a routine basis. This inspection may be done by owner/user personnel, and can be done by other than an API certified inspector. Personnel performing this inspection should be knowledgeable of the storage facility, the tank and the characteristics of the product. The interval of such inspections shall be consistent with conditions at the particular site, but shall not exceed 1 month.

6.2 SCHEDULED INSPECTIONS

6.2.1 EXTERNAL

All storage tanks shall be given a formal visual external inspection by an API 653 certified inspector at least every 5 years or the quarter corrosion-rate life of the shell, whichever is less. Tanks may be in operation during this inspection. Inspection of all components shall be inspected in accordance with the recommendations of API 653.

6.2.2 Corrosion Monitoring

Ultrasonic thickness gauging may be performed to determine the rate of uniform corrosion. The extent and frequency of inspection shall be determined by the Chief Inspector. U.T. thickness data shall be kept in electronic format using Pipe+, or on hardcopy or both.

6.2.3 INTERNAL

Inspections shall be made primarily to inspect the floor for corrosion, leaks, settlement, integrity of internal attachments, and to supplement sidewall U.T. inspection data.

The frequency shall be based on API 653 Para 4.4.2, through Para 4.5, and the availability of the tank.

In no case shall the internal inspection interval exceed 20 years.

6.3 ROOF SEALS

Roof seals shall be inspected in accordance to the following paragraphs. The requirements in the following paragraphs are based on the most severe requirements combined from Federal 40 CFR Part 60 and Colorado State Air Regulation #7.

6.3.1 External Floating Roof Tank

A. Routine Inspections

1. Semi-Annually
2. Includes a visual inspection of the secondary seal gap if equipped with a secondary seal.
3. Ensure all seal closure devices meet the following:
 - a. No visible holes, tears, or other openings in the seal or any seal fabric or material.
 - b. The seal is uniformly in place around the circumference of the cover between the cover and the tank wall.
 - c. All seals and gaskets on other roof fittings (such as anti-rotation devices, and vacuum breakers) are in place and serviceable.
4. Ensure that the general condition of the roof meets the following:
 - a. The cover is floating uniformly on or above the liquid surface.
 - b. No visible defects in the surface of the cover.
 - c. Liquid on roof is draining adequately through the roof drain.
 - d. Pontoon cells are dry and free of liquid (visible through cell hatches).

B. Primary Seal Inspections

1. Seal gap measurement shall be made during hydrotest of the vessel or within 60 days of the initial fill with VOL and at least once every 5 years thereafter.
2. Seal gap shall be measured in accordance with para (6.3.1(D.))
3. The accumulated area of gaps between the tank wall and the mechanical shoe or liquid mounted primary seal shall not exceed 10.0 in² per ft of tank diameter and the width of any portion of any gap shall not exceed 1.5 in.
4. The accumulated area of gaps and the width of any portion of any gap for a vapor mounted primary seal shall be the same as a secondary seal.

C. Secondary Seal Inspections.

1. Seal gap measurement shall be made within 60 days of the initial fill with VOL and at least once per year thereafter.
2. Seal gap shall be measured in accordance with para (6.3.1(D.))
3. The total gap area between the secondary seal and the wall of the tank shall not exceed 1.0 in² per ft diameter and the width of any portion of any gap shall not exceed 0.5 in.

D. Method to determine gap area.

1. Physically measure the length and width of all gaps around the entire circumference of the tank in each place where a 0.32 cm (1/8") uniform diameter probe passes freely (without forcing or binding against the seal) between the seal and the tank wall; and;
2. Sum the area of the individual gaps.

- E. If any of the above items verify as a non-conformance the Environmental Manager must be notified Immediately.

6.3.2 Internal Floating Roof Tank

- A. Routine inspection of seal through roof hatches.

1. Once every 6 months.
2. Measure for detectable vapor loss.
(VOC conc. > 10,000 ppm. must be reported.)
3. Ensure during the inspection:
 - a. No visible holes, tears, or other openings in the seal or any seal fabric or material.
 - b. The cover is floating uniformly on or above the liquid surface.
 - c. No visible defects in the surface of the cover.
 - d. No liquid accumulated on the cover.
 - e. The seal is uniformly in place around the circumference of the cover between the cover and the tank wall.

- B. Internal Inspection of cover and seal.

1. Whenever tank is out of service, OR
2. Whenever the routine inspection reveals detectable vapor loss.
3. In no case shall the inspection frequency exceed 10 years.
4. Must notify the Environmental Manager before such an inspection.

5. Ensure during the inspection:

- a. No visible holes, tears, or other openings in the seal or any seal fabric or material.
- b. The cover is floating uniformly on or above the liquid surface.
- c. No visible defects in the surface of the cover.
- d. No liquid accumulated on the cover.
- e. The seal is uniformly in place around the circumference of the cover between the cover and the tank wall.
- f. All seals and gaskets on other roof fittings (such as anti-rotation devices, and vacuum breakers) are in place and serviceable.

D. If any of the above items verify as a non-conformance the Environmental Manager must be notified Immediately.

7.0 RECORD KEEPING

7.1 General API 653 Inspections

Records of inspection results shall be kept in accordance with API 653. Records shall be stored in the appropriate Inspection Department Equipment files.

7.2 Seal Inspections

7.2.1 Maintain records of inspection results for a minimum of 10 years in the appropriate Inspection Department Equipment files.

7.2.2 Prepare and issue a report of findings to the Environmental Manager.

COLORADO REFINING COMPANY

A Subsidiary of TOTAL Petroleum

Atmospheric Storage Tank

Secondary Seal GAP Inspection Record

Tank No[#]:

Date Inspected:

Service:

Lost Inspection:

Size, BBL:

Inspector:

Dia:

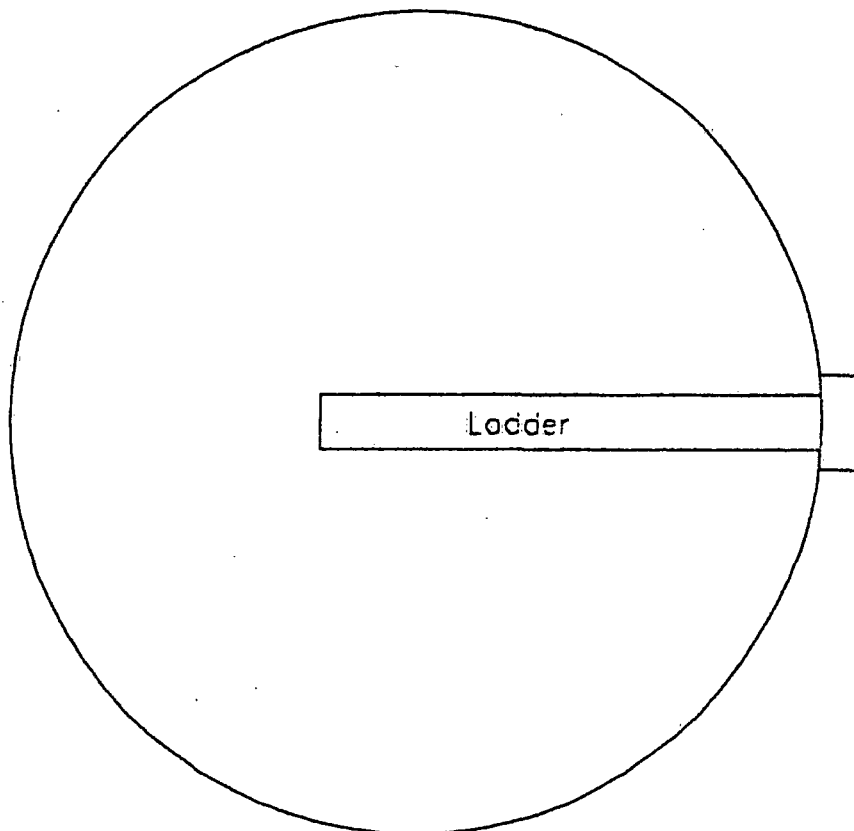
API Cert[#]:

Roof Type:

Fill Height During Inspection:

Record location & length of seal gap exceeding 1/8"

Total & Record the Gap Area: _____ -



COLORADO REFINING COMPANY

A Subsidiary of TOTAL Petroleum

Atmospheric Storage Tank

Routine Seal Inspection Record

Tank No#:

Date Inspected:

Service:

Last Inspection:

Size, BBL:

Inspector:

Dio:

API Cert#:

Roof Type:

Fill Height During Inspection:

Are there any visible holes, tears, or other openings compromising seal integrity?

Are there any visible defects in the floating roof itself? (holes, tears, other damage).

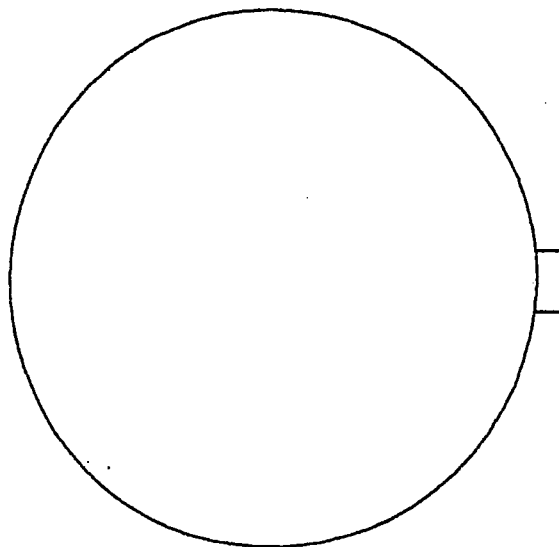
Is the roof floating uniformly on or above the liquid surface?

Does the roof show any signs of liquid on the surface, or sinking?

Is the seal uniformly in place between the roof and the tank wall?

If any of these conditions verify as a non-conformance then notify the Environmental Manager Immediately.

Record inspection access points and non-conformances on sketch.



GENERAL TANK INSPECTION

TANK # _____

DATE _____

INSPECTED BY: _____

revised 1/25/95

CHECK APPROPRIATE BOX

EXTERIOR	AREAS OK	NEEDS ATTENTION
LEAKAGE, PITTING, FOAM SYSTEMS		
DENTS/DISTORTION		
CORROSION		
PAINT DETERIORATION		
HANDRAILS		
WELDS		
PLATFORM SUPPORTS		
PLATFORM AREAS		
CONE ROOFED TOPS		
GRADING PROPERLY ATTACHED		
NON SKID OK		
ANY NOTICEABLE VAPORS		
EXTERNAL FLOATERS		
ROOF CONDITION		
ROPE CONDITION		
SEAL CONDITION		
ROOF DRAIN VALVE OPEN		
ROOF DRAIN/LID AREA FREE OF DEBRIS		
MANWAYS, VALVES, NOZZLES		
NO SIGNS OF LEAKAGE		
AUTOMATIC GAUGING DEVICE		
THERMOMETER		
SWING LINES - TANK MIXERS		
FOUNDATION		
GAPS UNDER TANK		
WATER DRAINS AWAY FROM FOUNDATION		
AREA PIPING		

REMARKS _____

REV: 1
DATE: 6-17-97
SUPERVISOR: M. E. Smith
APPROVED: J. A. Brown

TOTAL PETROLEUM INC.
DENVER REFINERY
5800 BRIGHTON BLVD.
COMMERCE CITY, CO. 80022

IN-SERVICE PIPING
Procedure No. INSPPG02

1.0 SCOPE

This procedure defines the relationship of the Inspection Organization to the Inspection, Repair, Alteration, and Rerating of existing piping systems.

2.0 APPLICATION

This procedure applies to QA/QC Inspectors and other personnel performing Inspection, Repair, Alteration, and Rerating of In-Service Piping Systems as defined in API 570.

3.0 GENERAL

This procedure covers the following subjects:

1. Adoption of API 570 as the controlling code for In-Service Piping.
2. Recognition of service classes.
3. Defines a fourth service class for general utilities.
4. Describes where to locate TML's.
5. Describes the general inspection process.
6. Visual Inspection

7. Repairs, Alterations, and Rerates

8. Defines the application of the API 570 service classes within Pipe+.

4.0 REFERENCES

The following documents, have been referenced in the preparation of this procedure and are considered a part of this procedure as applicable:

American Petroleum Institute (API)

API 570 Inspection, Repair, Alteration, and Rerating of In-Service Piping Systems

Total Petroleum, Denver Refinery - Inspection Procedures

INSMT01-Magnetic Particle Inspection

INSPT01-Dye Penetrant Inspection

INSUT01-Ultrasonic Thickness Measuring

INSPPG01-Piping Fabrication Requirements.

5.0 API 570

API 570 shall be recognized as the controlling code for any in-service piping system inspection, repair, alteration, or rerating.

6.0 SERVICE CLASSES

6.1 All piping systems shall be categorized into four different service classes based on the potential hazards of the process fluids each system contains.

6.2 The three service classes recommended by API 570 shall be used as defined in API 570.

6.3 Class four shall be used at Total Petroleum, Denver Refinery, to define piping systems that are considered exclusions to API 570.

- 6.4 Piping systems defined by API 570 (para 1.1.2.2) as exclusions and/or optional shall be recognized as exclusions. The refinery inspector may require inspection, of an excluded piping system on a case by case basis.

Excluded systems are:

- Steam
- Condensate
- Water
- Boiler Feed
- Firelines
- Sewers (Process, Sanitary, and storm)
- Tracers
- Instrumentation lines
- Piping diameters of NPS .5" and under
- Chemical Injection Systems
- Any other category "D" service as defined in ANSI B31.3
- Non-metallic piping

7.0 INSPECTION

7.1 TML LOCATIONS

In general, a TML shall be located before, on, and after, each elbow. Straight runs shall have TML's located approximately every 50 to 100 feet. Other TML's may be added at the discretion of the inspector based on prior experience, service, or history.

Examples of TML locations are shown in APPX 1.

7.2 INSPECTION PROCESS

- 7.2.1 Trace out process lines on P&ID to determine product, service class, and location.
- 7.2.2 Draw isometric field sketches to show TML locations.
- 7.2.3 Measure pipe wall thickness using either U.T. or R.T.
- 7.2.4 Record measured thickness.

8.0 VISUAL

8.1 Visual inspection shall be done in accordance with API 570.

8.2 Inspect the piping outside surface, where visible, for leaks, pitting, corrosion, and mechanical damage ,(gouges, chaffing, deformation, laminations, cracking, etc.)

8.3 Inspect the pipe length for distortion, and damaged insulation where applicable.

8.4 Inspect flanges and valves for leaks and other damage, pipe hangers for proper support, movement, and clearance.

8.5 Note any threaded fittings that require backwelding and write workorder to correct.

9.0 Repairs, Alterations, and Rerates

9.1 Repairs, Alterations, and Rerates of existing piping systems shall be done in accordance with API 570.

10.0 Record Keeping

10.1 TML data may initially be recorded either on hard copy or in electronic files, which shall be located in the Inspection office.

10.2 Final recording of TML data shall be in Pipe+. (A software program that calculates estimated remaining life, and establishes inspection intervals.)

10.2.1 The maximum inspection interval for thickness measurement of class 1 and 2 systems shall be set at 5 years.

10.2.2 The service class shall be entered in the Pipe+ Equipment Circuit data screen in the "service" field.

10.2.3 The actual product shall be entered in the Pipe+ Equipment Circuit data screen in the second line of the description field when applicable.

10.3 Visual inspection notes may be recorded either on hard copy or in electronic file, which shall be located in the Inspection office.

- 10.4 Final recording of visual inspection notes shall be in Pipe+.
- 10.5 Final recording of Piping sketches showing TML locations shall be in the Pipe+ AutoCad link.
- 10.6 Documentation of Repairs, Alterations, and Rerates, shall be recorded as defined in Total Petroleum, Denver Refinery - Inspection Procedure INSPPG01 Piping Fabrication Requirements.

11.0 Glossary:

CLASS 1

Services with the highest potential of resulting in an immediate emergency if a leak were to occur are in Class 1. Such an emergency may be safety or environmental in nature. Examples of Class 1 piping include, but are not necessarily limited to, those containing the following:

- a. Flammable services that may auto-refrigerate and lead to brittle fracture.
- b. Pressurized services that may rapidly vaporize during release, creating vapors that may collect and form an explosive mixture, such as C₂, C₃, and C₄, streams.
- c. Hydrogen sulfide (greater than 3 percent weight) in a gaseous stream.
- d. Anhydrous hydrogen chloride.
- e. Hydrofluoric acid.
- f. Piping over or adjacent to water and piping over public thoroughways. (Refer to Department of Transportation and U.S. Coast Guard regulations for inspection of underwater piping.)

CLASS 2

Services not included in other classes are in Class 2. This classification includes the majority of unit process piping and selected off-site piping. Typical examples of these services include those containing the following:

- a. On-site hydrocarbons that will slowly vaporize during release.
- b. Hydrogen, fuel gas, and natural gas.
- c. On-site strong acids and caustics.

CLASS 3

Services that are flammable but do not significantly vaporize when they leak and are not located in high-activity areas are in Class 3. Services that are potentially harmful to human tissue but are located in remote areas may be included in this class. Examples of Class 3 service are as follows:

- a. On-site hydrocarbons that will not significantly vaporize during release.
- b. Distillate and product lines to and from storage and loading.
- c. Off-site acids and caustics.

CLASS 4

Definition is found in paragraph 6.4

M.T.	Magnetic Particle Testing
NPS	National Pipe Size
P.T.	Penetrant Testing
TML	Thickness Measurement Location
U.T.	Ultrasonic Testing

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Telephone (303) 295-4500

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INTER OFFICE MEMO

TO: All Pumping Department Personnel

DATE: August 31, 1994

FROM: Scott Klingler

SUBJECT: Rotating Equipment Inspection

Another awareness aspect of PSM, Process Safety Management, has arisen. This requires visual inspection of all rotating (pump) equipment. This is a Federal and State Air Monitoring Regulation.

To insure all pumps in your department are performing as designed, a new **STANDARD OPERATING PROCEDURE** is being implemented, beginning immediately.

Each shift, as you make your initial rounds of the tank farms, must check all pumps which are running, or pumps which run on demand, such as the loading dock pumps. Check for leaks at pump flanges and seals, and look for pools of product around the seals, if the pump is idle.

Each time you start a pump, whether at a local or remote location, go to the pump and check the pump for leakage. (NOTE: If the pumpers helper starts a pump it is the "A" pumpers responsibility the check the pump since the helper needs to be in attendance while loading or unloading a railcar). If the pump is leaking, shut down the pump and notify a supervisor. The rotating supervisor, or his appointed individual, will make an inspection to determine if the pump needs repaired or may remain in service.

Two copies are included, one is for your records, the other is to be initialed by you and returned to me. Comments or questions will be discussed.

R. Pointer
R. Hays
J. Romero
P. Donnel
R. Lucero

W. Geyer
N. Landry
G. Friedly
A. Giess
B. Greenrod

A. Lattany

cc: W. B. Forsyth
Files